

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An immunogen for inducing an immune response to a desired antigen protein, the immunogen comprising:

a fusion protein composed of one selected from the full-length and a part of the antigen protein and one selected from a folding factor and its subunit linked thereto via at least one peptide bond.

Claims 2-22 (Cancelled)

23. (New) The immunogen as defined in claim 1, wherein the antigen protein is serotonin receptor 5-HT1aR.

24. (New) The immunogen as defined in claim 23,

wherein the fusion protein comprises either the full-length of serotonin receptor 5-HT1aR or a partial protein consisting of 6 or more amino acid residues thereof.

25. (New) The immunogen as defined in claim 1, being produced by transcription and translation of a fusion gene comprising a gene encoding one selected from the full-length and a part of the antigen protein and a gene encoding one selected from the folding factor and its subunit.

26. (New) The immunogen as defined in claim 25, wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more amino acid residues of the antigen protein.

27. (New) The immunogen as defined in claim 1, wherein the folding factor is a chaperonin consisting of a plurality of chaperonin subunits.

28. (New) The immunogen as defined in claim 27, wherein the antigen protein is linked to the N-terminus and/or the C-terminus of the chaperonin subunit.

29. (New) The immunogen as defined in claim 27,

being provided with an amino acid sequence to be cleaved by a protease between the chaperonin subunit and the antigen protein.

30. (New) The immunogen as defined in claim 27, wherein the chaperonin subunit is derived from one selected from a group consisting of bacteria, archaea and eukaryotes.

31. (New) The immunogen as defined in claim 27, wherein the antigen protein is serotonin receptor 5-HT1aR.

32. (New) The immunogen as defined in claim 31, wherein the fusion protein comprises either the full-length of serotonin receptor 5-HT1aR or a partial protein consisting of 6 or more amino acid residues thereof.

33. (New) The immunogen as defined in claim 27, being produced by transcription and translation of a fusion gene comprising a gene encoding one selected from the full-length and a part of the antigen protein and a gene encoding one selected from the folding factor and its subunit.

34. (New) The immunogen as defined in claim 33, wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more amino acid residues of the antigen protein.

35. (New) The immunogen as defined in claim 27, wherein the antigen protein is accommodated in a chaperonin ring formed by the chaperonin subunits.

36. (New) The immunogen as defined in claim 35, wherein the chaperonin ring is consisting of 5 to 10 chaperonin subunits.

37. (New) The immunogen as defined in claim 35, having two chaperonin rings non-covalently associated on each other's ring plane or each other's side.

38. (New) The immunogen as defined in claim 27, wherein at least two of the chaperonin subunits are serially linked to one another via peptide bonds.

39. (New) The immunogen as defined in claim 38, wherein the antigen protein is linked to the N-terminus and/or the C-terminus of the chaperonin subunit.

40. (New) The immunogen as defined in claim 38, wherein the antigen protein is linked between the chaperonin subunits.

41. (New) The immunogen as defined in claim 38, being provided with an amino acid sequence to be cleaved by a protease between the chaperonin subunit and the antigen protein.

42. (New) The immunogen as defined in claim 38, being provided with an amino acid sequence to be cleaved by a protease between the chaperonin subunits.

43. (New) The immunogen as defined in claim 38, wherein the chaperonin subunit is derived from one selected from a group consisting of bacteria, archaea and eukaryotes.

44. (New) The immunogen as defined in claim 38, wherein the antigen protein is serotonin receptor 5-HT1aR.

45. (New) The immunogen as defined in claim 44,

wherein the fusion protein comprises either the full-length of serotonin receptor 5-HT1aR or a partial protein consisting of 6 or more amino acid residues thereof.

46. (New) The immunogen as defined in claim 38, being produced by transcription and translation of a fusion gene comprising a gene encoding one selected from the full-length and a part of the antigen protein and a gene encoding one selected from the folding factor and its subunit.

47. (New) The immunogen as defined in claim 46, wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more amino acid residues of the antigen protein.

48. (New) The immunogen as defined in claim 38, wherein the antigen protein is accommodated in a chaperonin ring formed by the chaperonin subunits.

49. (New) The immunogen as defined in claim 48, wherein the chaperonin ring is consisting of 5 to 10 chaperonin subunits.

50. (New) The immunogen as defined in claim 48,

having two chaperonin rings non-covalently associated on each other's ring plane or each other's side.

51. (New) The immunogen as defined in claim 1, wherein the folding factor is a foldase.

52. (New) The immunogen as defined in claim 51, wherein the antigen protein is linked to the N-terminus and/or the C-terminus of the foldase.

53. (New) The immunogen as defined in claim 51, wherein the antigen protein is serotonin receptor 5-HT1aR.

54. (New) The immunogen as defined in claim 53, wherein the fusion protein comprises either the full-length of serotonin receptor 5-HT1aR or a partial protein consisting of 6 or more amino acid residues thereof.

55. (New) The immunogen as defined in claim 51, being produced by transcription and translation of a fusion gene comprising a gene encoding one selected from the full-length and a part of the antigen protein and a gene encoding one selected from the folding factor and its subunit.

56. (New) The immunogen as defined in claim 55, wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more amino acid residues of the antigen protein.

57. (New) The immunogen as defined in claim 51, wherein the foldase is a PPIase.

58. (New) The immunogen as defined in claim 57, wherein the PPIase is derived from one selected from a group consisting of Escherichia coli and archaea.

59. (New) The immunogen as defined in claim 57, wherein the antigen protein is serotonin receptor 5-HT1aR.

60. (New) The immunogen as defined in claim 59, wherein the fusion protein comprises either the full-length of serotonin receptor 5-HT1aR or a partial protein consisting of 6 or more amino acid residues thereof.

61. (New) The immunogen as defined in claim 57,

being produced by transcription and translation of a fusion gene comprising a gene encoding one selected from the full-length and a part of the antigen protein and a gene encoding one selected from the folding factor and its subunit.

62. (New) The immunogen as defined in claim 61, wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more amino acid residues of the antigen protein.

63. (New) A composition for immunological use, being prepared by mixing of the immunogen as defined in claim 1 with an adjuvant.

64. (New) A composition for immunological use, being prepared by mixing of the immunogen as defined in claim 27 with an adjuvant.

65. (New) A composition for immunological use, being prepared by mixing of the immunogen as defined in claim 38 with an adjuvant.

66. (New) A composition for immunological use,

being prepared by mixing of the immunogen as defined in claim 51 with an adjuvant.

67. (New) A composition for immunological use, being prepared by mixing of the immunogen as defined in claim 57 with an adjuvant.

68. (New) A method of producing an antibody, the method comprising the steps of:
immunizing an animal except human with the immunogen as defined in claim 1, and
obtaining an antibody specific to the antigen protein from the animal.

49. (New) A method of producing an antibody, the method comprising the steps of:
immunizing an animal except human with the immunogen as defined in claim 27, and
obtaining an antibody specific to the antigen protein from the animal.

70. (New) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the immunogen
as defined in claim 38, and

obtaining an antibody specific to the antigen
protein from the animal.

71. (New) A method of producing an antibody, the
method comprising the steps of:

immunizing an animal except human with the immunogen
as defined in claim 51, and

obtaining an antibody specific to the antigen
protein from the animal.

72. (New) A method of producing an antibody, the
method comprising the steps of:

immunizing an animal except human with the immunogen
as defined in claim 57, and

obtaining an antibody specific to the antigen
protein from the animal.

73. (New) A method of producing an antibody, the
method comprising the steps of:

immunizing an animal except human with the
composition as defined in claim 63, and

obtaining an antibody specific to the antigen protein from the animal.

74. (New) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the composition as defined in claim 64, and

obtaining an antibody specific to the antigen protein from the animal.

75. (New) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the composition as defined in claim 65, and

obtaining an antibody specific to the antigen protein from the animal.

76. (New) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the composition as defined in claim 66, and

obtaining an antibody specific to the antigen protein from the animal.

77. (New) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the composition as defined in claim 67, and

obtaining an antibody specific to the antigen protein from the animal.